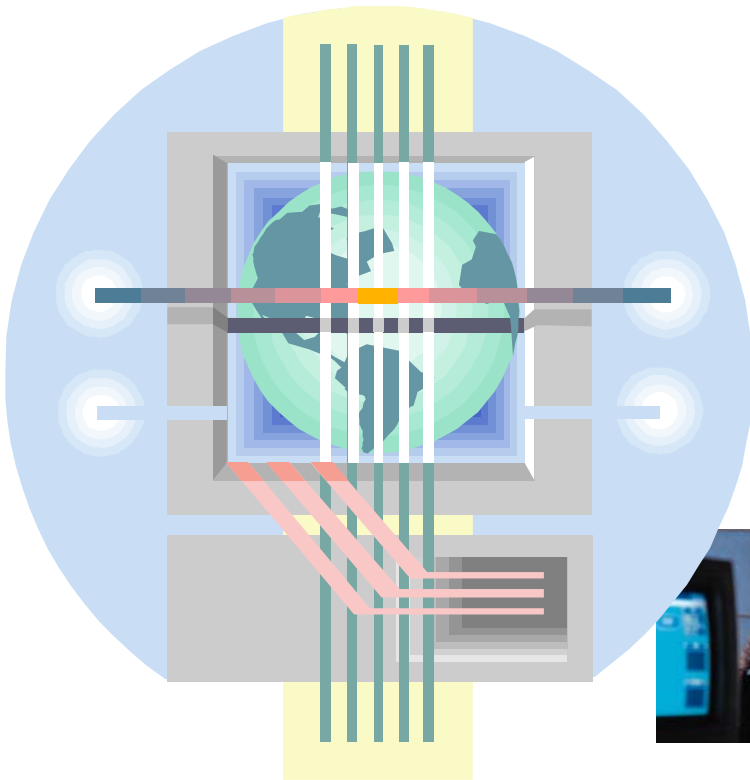


The State IT Master Plan



Executive Summary



State of Louisiana

Office of Information Technology

Information Technology Master Plan

Executive Summary

STATE OF LOUISIANA

OCTOBER 7, 2003

Key Points

- Enterprise delivery of services
- Plan while building...Build while planning
- IT Portfolio Planning, Budgeting, and Procurement
- Return on Investment
- Enterprise Architecture based on business processes, applications, information, and technology
- Centralization and Consolidation

“Capturing 21st century technology is critical to the future growth of Louisiana,”

concluded Governor Mike Foster in one of his weekly columns where he stressed the value of operating state government like a business, where citizens should expect the effective and efficient delivery of state services. To achieve this goal, the governor emphasized investments in technology and e-gov state services as top priorities.

Capturing Technology

A powerful concept. Indeed, since technology changes at “internet speed,” it is imperative that state government harness its use to provide value-added services effectively and efficiently. Otherwise, departments could be victimized by technology churn where costs spiral out of control, projects fail, and needs remain unmet.

Future Growth

Information technology and globalization are the driving forces of the new economy. They are changing the form and function of businesses and are restructuring the services and operations of state government. These waves of change are more far reaching, in function and effect, than anything previously experienced.



Governor M.J. “Mike” Foster, Jr.

While government will not keep pace with industry in terms of cutting edge usage (and in most cases is probably wise not to jump in too quickly), state services should embrace an enterprise perspective to mirror best practices and be flexible enough to adapt to new platforms, protocols, devices or drivers that may influence the overall technical direction.

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Purpose and Introduction

To meet the challenges of change and growth while improving government services, Governor Foster instructed Acting Chief Information Officer, Chad McGee, to create a six-year IT master plan that provides the necessary vision and direction for digital, computerized government and to expand possibilities for state operations.

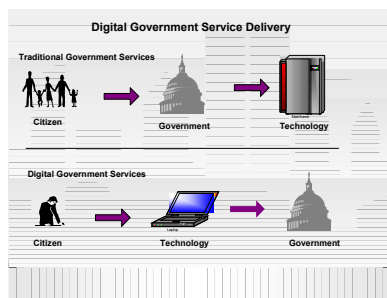
The goal is to use technology for a better Louisiana—a Louisiana empowered to serve the

public, improve education, enhance economic development, and defeat poverty.

The IT Plan establishes the basic framework for an enterprise IT architecture along with the critical layers necessary to support the programs and services addressed in the state’s strategic business planning and in *Vision 2020*, the state’s master plan for economic development.

Background for Planning

For the IT Plan to be successful, the root causes of the state's IT difficulties must be addressed. In February 2001, the state released the *LaConnections, Blueprint for Digital Government* report which was the result of a six month planning effort involving department executives and IT professionals throughout state government. Two critical needs identified in the report were: 1) to implement digital government as a means to provide high-quality citizen services, and 2) to centralize and consolidate the many and varied IT assets within state government into an enterprise operation.



Bringing government to the people through technology

The IT Master Plan continues the major themes outlined in *LaConnections*, placing emphasis on developing the technical infrastructures necessary to support its broader goals. Accordingly, at the direction of Governor Foster, and through consultations with government leadership, the IT Master Plan centers on :

- Transitioning the state's technical environment from a collection of decentralized and fragmented data centers to unify operations based on an enterprise architecture and the sharing of resources.
- Enabling the departments to concentrate on improving the delivery of customer services rather than the technology being employed.

Because the transition will not occur overnight, the Plan takes a strategic view toward the scope of technologies. Consequently, the IT Plan: 1) spans a six year horizon to give it the perspective to proactively address the many uncertainties in today's business, technology, and government landscape,

and 2) targets initiatives that provide a quick return on investment, while simultaneously allowing the planning to evolve.

A Six Year Horizon.

In many ways, the IT Plan mirrors that of urban planning. Urban planners establish the framework to plan and develop a transportation and utility infrastructure along with creating zoning ordinances to guide the physical development of the community to ensure that growth is managed.

The same principles apply here, where IT strategic planning includes the IT infrastructures, utilities, systems, and processes that will support the overall business needs and the specific departments of state government. Six-year planning not only focuses on current business needs and available solutions, but positions state government to move beyond the dotcom era, to the next generation of technology.

Plan while building...build while Planning.

In addition to the six year horizon, the IT Plan allows for development and planning to occur simultaneously. An industry example of this *plan while building* approach is Microsoft's *Solutions Based Framework* whereby projects are not only driven by the enterprise model, but directly impact the evolution of the enterprise architecture itself. IBM and other leading technology providers have also adopted similar methodologies in developing and deploying their products.

Today, the focus is on rapid return on investment, and expectations are high for implementing and providing quick-to-market solutions. Systems must be built and infrastructure must be deployed. As specific initiatives unfold, their "real world" experiences directly affect and alter the course of the plan and will be incorporated into future versions. This approach allows the plan to proceed more quickly and assures that the plan remains grounded in reality.

The state IT Plan implies the *plan while building* methodology. It recognizes that requirements and priorities for the "complete" plan often change once a working version is in place that solves some portion of the state's infrastructure and business process issues. This process tightly focuses on key issues that can be defined and managed, thereby rapidly delivering value to the state.

"The deliberate tempo of government is running headlong into a world running on Internet time"

— Steve Kolodney,
former CIO
State of
Washington



Internet Access in Libraries—Bringing Technology to the Public



The Plan

Elements of the Plan—The Road to Enterprise Computing

Louisiana state government faces many challenges in the management of statewide information resources.

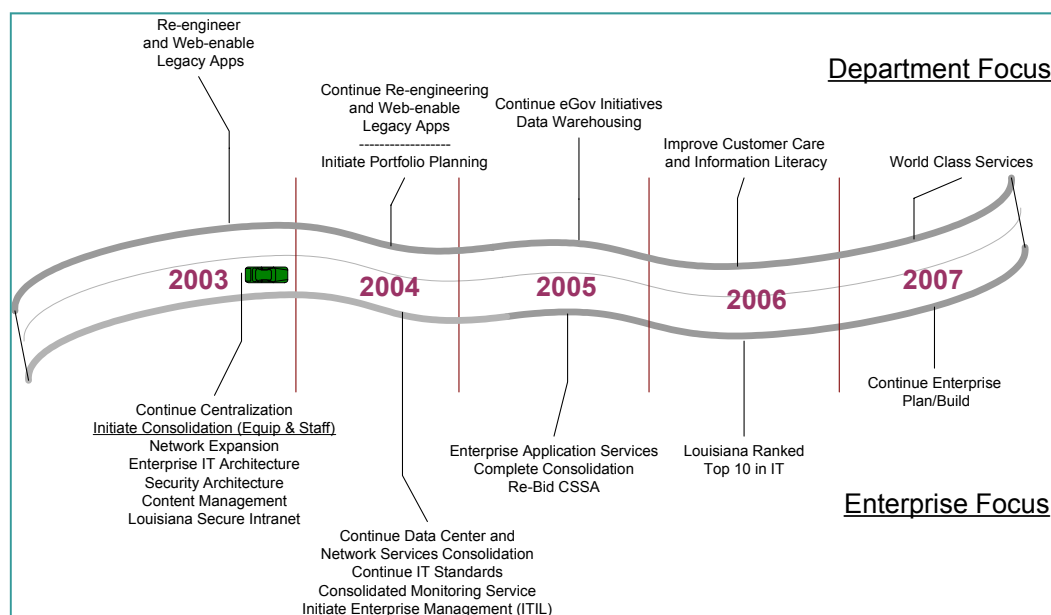
The state IT Plan for managing IT resources is broken down into the following sections on:

- Business Process
- Governance
- IT Enterprise Architecture

The major initiatives that are anticipated and the timetable for their unfolding are depicted in the following diagram. It should be reiterated that the details of the plan will continue to evolve and be refined based on the feedback received from specific project initiatives as they are undertaken.

“Success is related to ensuring that technology expenditures result in return on investment—be it profit in the private sector or reduced cost and improved services in the public sector”

— Chad McGee ,
Acting CIO
State of Louisiana



Road to Enterprise Computing: Major initiatives over next six years

The top portion of the diagram illustrates how the focus of the departments will shift more toward service to its customers rather than on technology infrastructure issues. The bottom section depicts the enterprise focus of the Plan, where information technology will emphasize its themes of centralization, standards,

sharing of resources, statewide help desk, single desktop office suite and email, and network management. Since the *plan while building approach* will be used, the implementation of many activities initiatives (e.g., e-mail, consolidation) may be phased over several calendar years.

First Element: Business Process

A primary goal established by LaConnections is to provide world-class services to its citizens and other customers through the effective use of technology, especially the Internet. The IT Plan fully supports this objective by enabling the departments to devote their resources and energies on the delivery of services rather than getting mired in the technologies involved.

Under the IT Plan, state departments and agencies will continue to oversee their traditional business programs and services as prescribed by statutes and regulations. However, the IT Plan identifies areas of common interest where the state can most effectively leverage the infrastructure from desktop to back office to control costs and realize enterprise efficiency. The IT Plan affects support of the business process as follows:

1. *Customer-centric.* Embraces a customer-centric mindset that encourages departments to focus their expertise on the delivery of quality services to their customers.
2. *IT Portfolio Management.* Ties department IT planning to their business plan and treats IT assets and budgets as a portfolio of investments.
3. *Return-on-Investment (ROI).* Requires new projects to provide a return on investment that is calculated by a full business case analysis, including an assessment of total costs, benefits, and risks.
4. *Technology as a Utility.* Leverages scarce IT resources by providing centrally managed IT services to departments more like a utility available when and where needed.

Customer Centric.

The IT Plan supports the assumption that in the next six years digital government will become

the primary means by which Louisiana government will provide citizens "around-the-clock" services to increase access to information, improve customer services, and complete important transactions.

IT Portfolio Management.

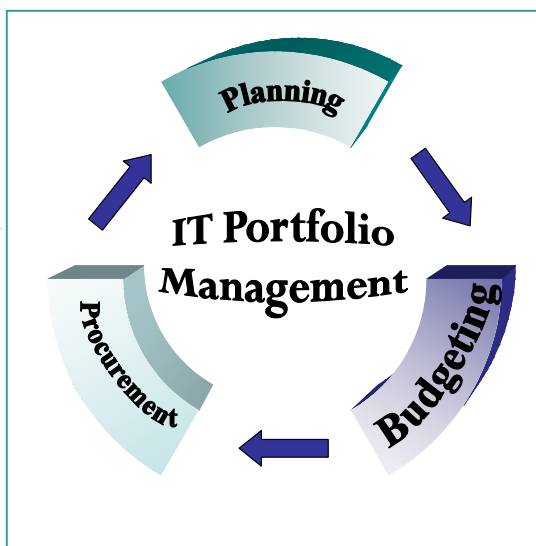
Rapid advances in IT and trends for offering web based services have multiplied the opportunities for their effective application in state agencies. However, the increasing velocity of change and complexity, and business dependence on IT has led to substantial increases in the typical size and risk of IT projects. A rigorous strategic planning process is the first step to mitigate the risk of IT project failures, and realizing the benefits of carefully applied IT solutions.

Department based IT planning consists of two fundamental characteristics:

First, departments will be required to align specific IT investments and initiatives

to the statewide strategic master plan and then monitor the results of these efforts through the widely acclaimed *Louisiana Performance Accountability System*.

Secondly, the use and investment in technology will be viewed as a portfolio. The *IT Portfolio Management* concept was introduced by the State of Washington and is modeled after a stock portfolio. It provides departments with a process for determining which IT projects (investments) to initiate and maintain based on their business requirements and economic justification. The portfolio provides a process for coordinating new projects in the context of a business plan and with consideration of the larger (state enterprise) IT portfolio.



IT Portfolio Management Concept—A holistic approach to IT planning, budgeting, and oversight.

"Manage innovation as a portfolio of options. [IT budgets] could be managed not as a series of discrete projects, but as a portfolio."

— Larry Downs and Chunka Mui; in "Unleashing the Killer App," 1998



Computers aid criminal investigation with digital fingerprint analysis

While department portfolios will be viewed as part of a statewide IT master plan, nothing in the portfolio approach should be construed as diminishing department executives' statutory authority and accountability. The ultimate decision to enhance agency resources through investments remains in the department.

Department IT Portfolio

- Mission, strategies, programs, and business processes
- Installed hardware, software, networks, and physical facilities
- Technical management and support staff
- Applications that support agency programs and business processes
- Partnerships or interfaces with other organizations
- Current and planned projects
- Cost and benefits of current and planned investments

Return on Investment (ROI).

IT investments are becoming increasingly larger and more strategic to the mission of the departments and

to the state as a whole. Consequently, state officials and tax payers are demanding quantifiable benefits with the expectation that projects provide an identifiable return on investment.

The IT Plan requires a sound business case to be made for new IT projects and investments. The justification methodology is based on the *Rapid Economic Justification* model that takes into account value, total cost of ownership, and risks as its primary variables.

Major projects must be accompanied by a cost/benefit analysis when the project is requested (i.e., budget request) and again at major phases, when the financial metrics become better known.

Technology as Utility.

Through the state's consolidation and centralization of IT resources, the IT Plan engenders significant resource sharing with the goal of providing centrally managed technical services, much like a utility to be used when and where needed. This enables agencies to fully focus on business problems, in lieu of getting mired in technical details.

"The IT Plan leverages the infrastructure from desktop to back office to control costs and realize efficiency across the enterprise."

Second Element: Governance

The IT Plan approaches the governance of the state's technology resources from an enterprise perspective.

Similar to the private sector, IT governance in state government is restructuring itself to become streamlined and efficient while responding to calls to control costs. Managing IT has emerged as a significant challenge. Although there are similarities between state IT governance and the private-sector models, the controls built into state government structures present unique challenges that cannot be ignored.

At the highest level, the governance role of the state CIO and the Office of Information Technology was established by Act 772 of the 2001 Regular Session of the Louisiana Legislature. The CIO is supported by the IT Advisory Board and the Technical Advisory Group (TAG) which are composed of key personnel

throughout state government. The specifics of the IT Plan build on this legislative governance mandate.

Planning, Budgeting, and Procurement

As previously discussed, the IT Plan employs the IT Portfolio approach to plan, acquire, and manage its IT investments. New initiatives are viewed both in the context of the statewide infrastructure and the respective agency-specific programs they support.

Key aspects of the governance approach are:



Technology for
our Future

- Link agency IT plans and budget requests to their strategies and business plans.
- Support funding of IT initiatives based on state business priorities, expected ROI, and the extent to which they leverage the state's IT infrastructure.
- Monies for large or complex agency IT initiatives will be earmarked in an agency's budget requiring OIT oversight, so that the use of funds for approved projects can be effectively and responsibly monitored throughout the development life-cycle.
- A Centralization Fund will be established to support the state's effort toward centralization and consolidation of its IT resources by leveraging specific acquisition requests in a manner that best benefits the state's infrastructure as a whole.

Specific procedures to track IT activity have been developed for the budgeting and procurement phases. The process for linking initiatives to planning documents is being developed as part of the IT portfolio preparation guidelines to be published.

Third Element: IT Enterprise Architecture

To be successful, the state IT plan must be applied within a holistic framework of people, processes, and technology intensely focused on achieving business goals and objectives. Along these lines, a primary goal of the IT Plan is to establish an enterprise architecture that directly supports the business of the state enterprise, while minimizing non-value added complexity.

The enterprise architecture provides both the information and a decision framework that enables IT management to arrive at a usable high-

Project Oversight and Risk Management

Risks are inherent in every project and risk taking is essential to progress. The IT master plan sets forth a discipline and an environment for proactively identifying risks and mitigating their impact.

Major new projects are to be accompanied by an assessment of associated risks and a mitigation plan. These will be factored into the project's business case analysis when requests are received to fund specific initiatives.

Projects that lend themselves to incremental development and deployment

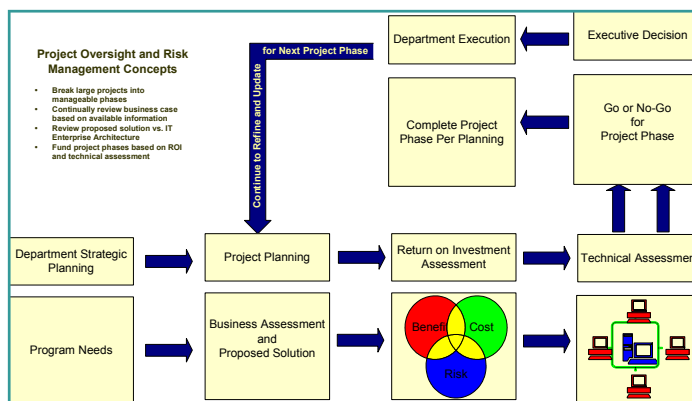
will be encouraged as a means to reduce risk. Large projects will be divided into manageable phases, and then each phase funded based on the continuing refinement and assessment of its current business case. For

example, funding for full implementation will typically be available when the design is sufficiently completed and the total cost of ownership can be determined.

This approach provides better management of IT funds than providing full funding for initiatives based on preliminary estimates that are often incomplete.



Technology and Teamwork



Current IT-10 and 10A budget request form concept will be used to communicate project requests, business case analysis, and procurement requests between the departments and OIT.

"The information provided by the architecture and the standards will be crucial for IT implementation and purchasing decisions, and will provide a powerful communication tool between the Office of Information Technology and the departments."

level plan. The plan includes both infrastructure and application systems projects as well as providing standards, guidelines, and other support for the broad set of activities that must be accomplished.

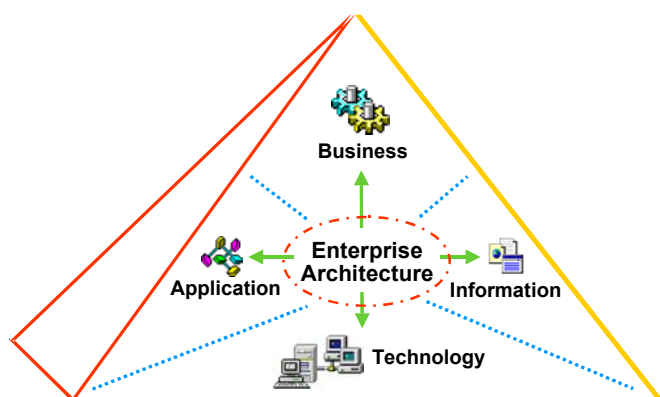
The IT Enterprise Architecture Perspective

Our enterprise architecture is a framework composed of four perspectives:

1. **Business:** the business processes of state government. It includes: the state's high-level goals and objectives, the services it delivers, the organization structure, and the cross-functional activities performed by the departments.
2. **Application:** the applications and systems that support the business processes. This consists of the automated services that support the business processes, the interaction and interfaces between them, and the priorities for developing new applications and changing older ones.
3. **Information:** what state government needs to know to run its business processes and operations, including standard data models, data management policies, and descriptions of how the information is provided and used.
4. **Technology:** the hardware and software supporting the state enterprise. This covers desktop and server hardware, operating systems, network connectivity components, printers, security, etc.

The technology perspective provides a logical description of infrastructure and system components that is necessary to support the application and information perspectives. It defines the set of technology standards and services needed to execute the business mission. The standards and services include, but are not limited to:

- Network services



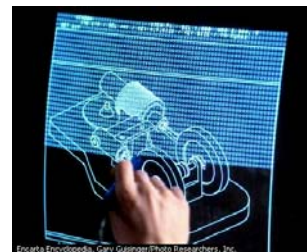
- E-Mail and messaging
- Desktop office suite
- Development environments

What is an Enterprise Architecture?

Enterprise architecture can be explained within the context of architecture itself. *Architecture* is defined as: (1) The art or science of building; (2) A unifying or coherent form of structure; (3) The manner in which components of a system are organized and integrated.

The collection of projects and systems within the state enterprise requires organization and structure to ensure that they integrate effectively. Continuing the urban planning analogy, a plan to build a city calls for a broad spectrum of services for urban users. At some point a master development plan must determine where to locate residential areas, office complexes, shopping malls, schools, etc. In addition, the underlying infrastructure of roads, water and sewage, telephones, and power systems must be determined.

In an optimum world, urban planners design systems for specific needs and expand them to meet changes in demand. When systems overload they either fail or break down completely. But when planners anticipate growth they can design the infrastructure to meet it.



Architecture—
Development by Design

- Enterprise hardware and applications
- Data/Accessibility
- System management
- Security
- Help Desk
- Automated Program Interfaces (APIs)
- Database management system (DBMS) services
- Technical specifications

How the IT Enterprise Architecture will be used.

The state IT architecture will be used to make rational decisions about its IT priorities, projects, policies, standards, and guidelines. The information provided by the architecture will be crucial for IT implementation and purchasing decisions, and will provide a powerful communication tool between the Office of Information Technology and the agencies.

“Breaking down the silos of information can only be done through enterprise-wide standards.”

—NASCIO’s “Guide to the States.”



The Implementation

The implementation approach follows the path illustrated earlier in the *Road to Enterprise Computing* diagram. This is discussed in the following sections on:

- Centralization and consolidation of IT facilities

ties

- Enterprise delivery of data center services
- Enterprise delivery of application services
- Enterprise delivery of desktop services

Centralization and Consolidation of IT Facilities

As business needs are identified, IT must quickly and incrementally respond to these requirements while maintaining relatively low costs. This can only be accomplished if the state IT community is managed as an enterprise.

The governance model needed to implement and support the approach described in the IT Plan requires that many of the state's disparate IT resources be centralized into an enterprise computing operation. The transition to an enterprise environment has already begun with the development of the Capitol Park Complex and will eventually expand into a statewide services network.

The enterprise networking services diagram illustrates how IT networking will be managed by the Office of Telecommunications Management sec-

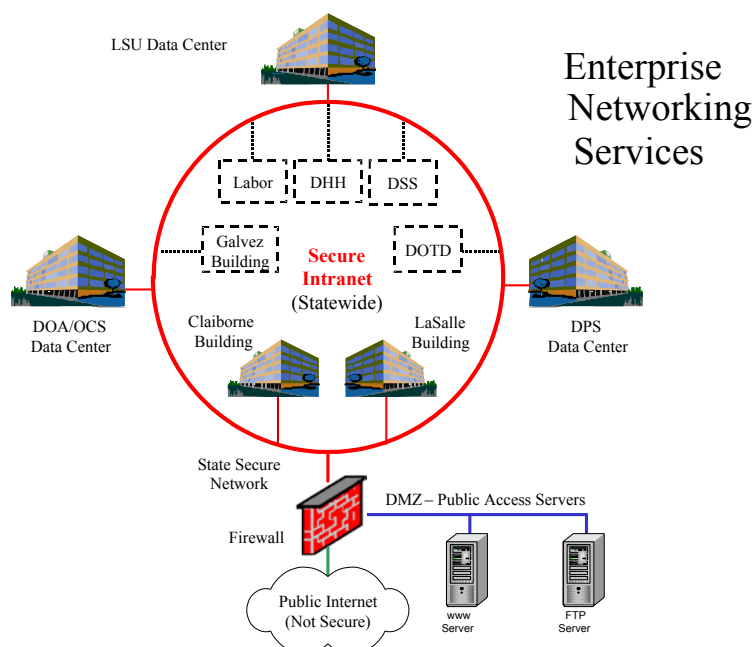
tion of OIT from an enterprise perspective for the department facilities.

In parallel with this effort, the IT data center operations of those departments relocating into Capitol Park will be transferred to either the Office of Computing Services facility or the Department of Public Safety Data Center.

The concept is to first co-locate department IT operations into one of two state data facilities with the intent of eventually absorbing them into a centralized operation. Again, the consolidation is already underway for the LaSalle and Claiborne buildings and is planned for the Galvez, Poydras, and other facilities.

“Centralizing both server topology and support of internal systems offers a way for IT to reduce operating expenses while retaining quality of service. Server consolidation is now in fact an emerging trend.”

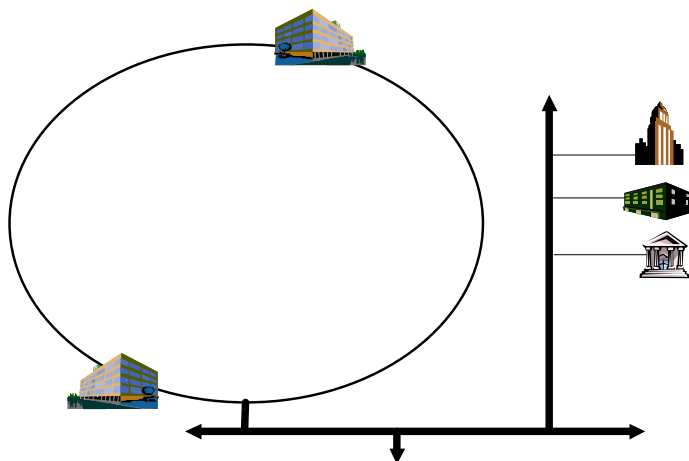
- GIGA Research



Enterprise Delivery of Data Center Services

There are considerable opportunities and possibilities for centralization to provide a quick pay-back in terms of improved services and reduction in costs. The model for accomplishing this is

Without consolidation or centralization, the individual data centers would each require costly raised flooring, specialized cooling, controlled access, disaster recovery, security procedures,



based on the delivery of enterprise services. The Office of Telecommunications Management has successfully used the *line of service* model for years. Dial tone for telephone service, video-conferencing, and Internet connectivity are but a few lines of services that have been provided.

Using this model, OIT plans to provide shared hardware resources, networking, technical support, operational support, and facility support

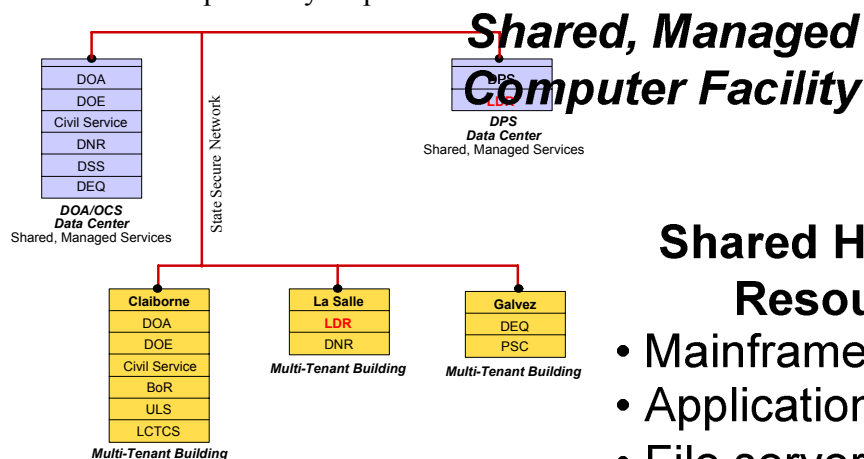
and operations staffing to run a data processing operation 24 hours a day, 7 days a week. Many of these costs are hidden within department operational budgets. Giga Research has reported that as much as 39% of the costs for operating and managing decentralized IT services are hidden or unknown.

With the enterprise approach, data center operations can be offered as a shared service. Further-

“Developing a service delivery model is a foundation for cost control, IT effectiveness, and CIO credibility and being seen with as a partner with the business”

- Giga Research

Centralization/Consolidation Participation by Department



from two enterprise data centers. The departments will continue to provide application development and support, user liaison, and print services.

more, by relieving the departments of common data center concerns, it frees them to better focus on re-engineering the business process applications, resulting in overall improved IT solutions for the departments.

Shared Hardware Resources

- Mainframes
- Application servers
- File servers
- Disk farms

Technical Support

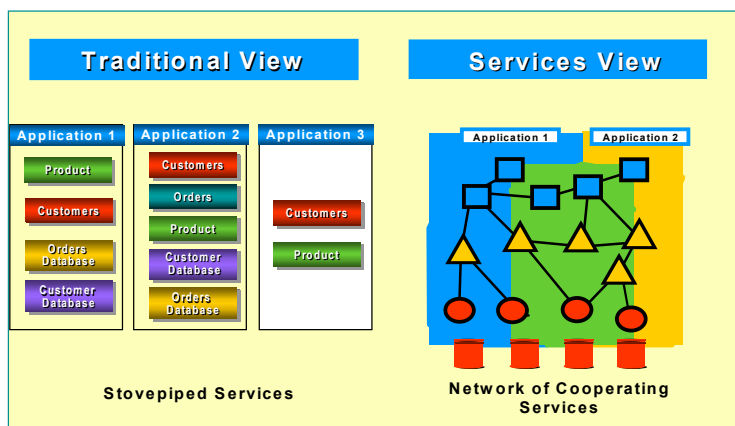
- Hardware
- Operating system
- Databases

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Enterprise Delivery of Application Services

The enterprise model for delivering data center services can be extended effectively to include application and desktop services. For example, one of the key benefits of the Louisiana E-mail is that it provides a common *payment gateway* so

to expand the suite of application service offerings, thereby making available additional solutions that can be shared at a savings both in time-to-market and in development costs. Some potential standard application services



IT Architecture model builds common framework to share application and desktop services.

that a department does not have to re-implement activities for credit card authorization, reporting, reconciliation, and interface to the state's accounting system over again for each new application. By providing a standard enterprise framework, departments can implement solutions more quickly and at much less cost. The plan is to use the enterprise service model

are: security, imaging, authentication/authorization, administration, directory, pre-built processes, authoring tools, data structure repository and pre-built mappings, adapter toolkits, mainframe/file/com adapters, audit tools, technical services, and execution platforms.



Building for tomorrow

Common Desktop Enterprise Services

- Operating system
- E-mail
- Office Suite
- Anti-virus
- Directory and Server Access
- Technical management and support staff
- Messaging
- Training
- Server Backup
- Licensing
- Collaboration

Enterprise Delivery of Desktop Services

Presently, the state has considerable dollars invested in its PC/desktop infrastructure. With the exception of the Windows operating system, much of the investment is spread across a variety of technologies with regard to networking, e-mail, word processing, spreadsheet, etc.

Following the enterprise model, once again, the plan is to develop and offer centrally managed lines of service for specific desktop functions such as e-mail, directory services, word processing, etc.

The first initiative planned for an enterprise desktop service is statewide e-mail. This provides

economy of scale benefits by centralizing hardware, software, and technical support, eliminating the need to duplicate and maintain expensive server hardware and server software licenses for 30 sites. It also would provide a state-wide e-mail directory, inter-department scheduling for meetings, and facilitates the rapid integration of emerging technologies (i.e., wireless, collaboration, messaging). Additional benefits related to end user training and the possible integration with ISIS Human Resources system could also be realized.

Because e-mail will be offered as a line of service, departments will be able to begin using

the service in a phased manner, so that start-up costs, i.e., the cost of acquiring client software, could be substituted in lieu of spending dollars to upgrade present e-mail systems.

Subsequently, the e-mail line of service approach to offering services could then be applied

for other standard desktop applications such as word processing, spreadsheet, desktop publishing, etc., thereby expanding the state's portfolio of enterprise offerings.

Current Initiatives

The State IT Master Plan creates an infrastructure for digital government that is based on strategically planning and implementing a synchronized set of initiatives and projects. Some of the major initiatives that focus on implementing the infrastructure to establish an enterprise framework are listed below.

While initiatives are listed separately, there is considerable interaction and interdependency among them. Also, in parallel with these initiatives the departments will continue to re-engineer existing legacy applications, thereby developing new and expanded offerings to their customers.

OIT Initiatives—2002

Citizen Services

- Louisiana E-Mail
- State Services Directory
- Single State Portal

Governance

- IT Procurement Oversight
- IT Budgeting Process
- IT Portfolio Planning
- Consulting and Support Services Agreements

IT Architecture

- IT Enterprise Architecture
- Enterprise and Desktop Standards
- Data Warehousing
- Security

Consolidation and Centralization

- Statewide E-Mail
- Capitol Park Complex Networking and Intranet
- Transfer of Data Center Operations to Shared Facilities
- Enterprise Support Agreements between OCS and departments.

“Even when a technology project is identified that can run core business processes more effectively or transform the business, selecting a technology solution is not enough. To reap the hoped-for benefits, companies must get implementations right, which means applying adaptive infrastructure models and operations excellence best practices.”

—Meta Group



“Making Louisiana a better place to live”



Summarizing the IT Enterprise Vision

The IT Master Plan proposes a technology framework based on the line-of-service model. While it emphasizes aspects that are of state-wide concern the IT Plan also seeks to allow a maximum possible diversity to encourage innovation and entrepreneurship by the departments.

The figure below envisions how businesses, citizens, and non-state government entities could interact with the state IT enterprise operation through the Internet and the Intranet. It is intended that the system will be open to support a broad diversity of communication and interaction devices (i.e., wireless, personal computers, laptops, telephony) and to cost effectively position the state for devices that may emerge in the future.

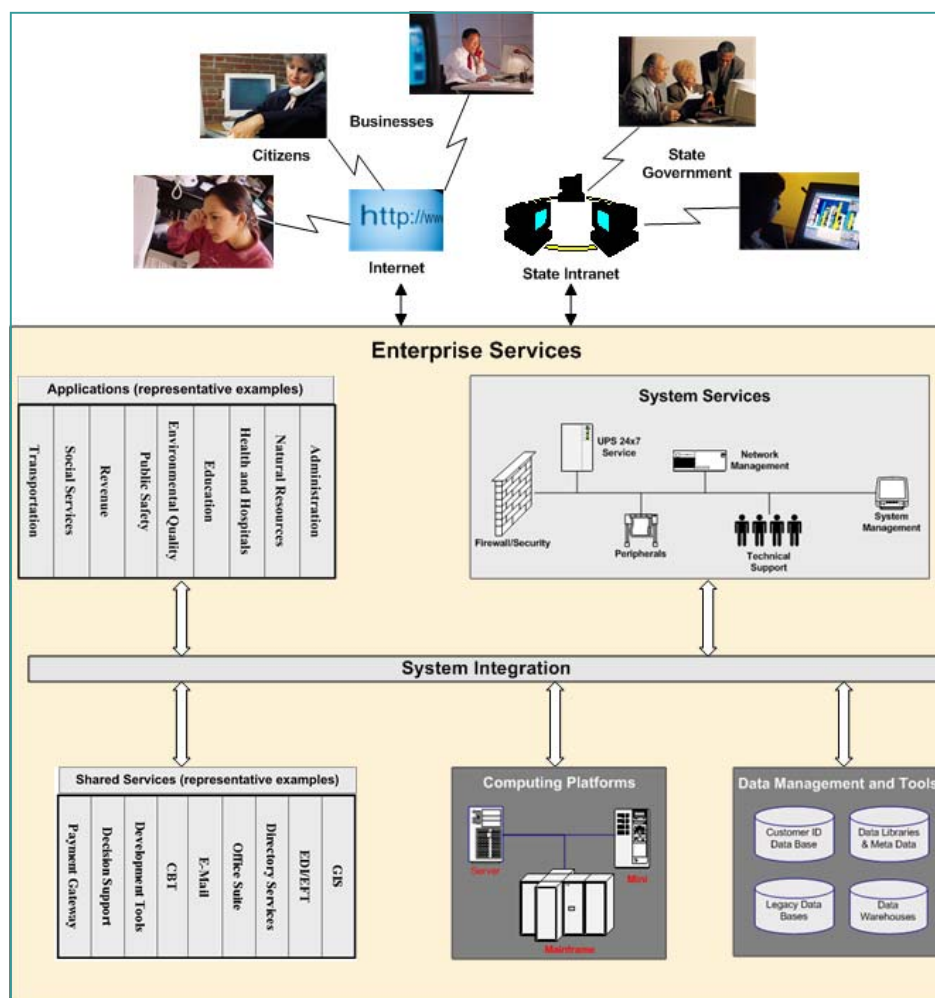
Departments will interact via a secure state intranet located behind a centrally managed firewall, while citizens and businesses will access the enterprise via the Internet. Once connected the system is envisioned to provide access to an enterprise-wide array of services from department applications, computing platforms, e-mail, technical support, office suites, and data warehouses.

As previously emphasized the implementation approach is to build while planning, thereby ensuring an IT Plan that is grounded in the reality of today, while envisioning the needs of the future.

When fully implemented Louisiana state government will have a world-class technology infrastructure capable of supporting the business and operations of state government .



Offering greater possibilities



“When fully implemented Louisiana state government will have a world-class technology infrastructure capable of supporting the business and operations of state government.”